

REMARKS

In the Office Action dated September 2, 2004, the Examiner rejected claims 1 and 4-14 under 35 U.S.C. § 102 as being anticipated by *Childs* (U.S. Pat. No. 4,680,638). Claims 2 and 3 were rejected under 35 U.S.C. § 103 as being unpatentable over *Childs* in view of *Kameyama et al.* (U.S. Pat. No. 5,416,516). Applicants have amended claims 1 and 7 and have cancelled claims 2, 3, and 15-19. For the reasons given below, Applicant respectfully submits that neither *Childs* nor *Kameyama*, taken alone or in combination, disclose, teach, or even suggest the presently claimed invention.

Objection to the Specification

The Examiner objected to the title of the invention for not being descriptive. Applicant has now amended the title as set forth above. The Examiner further objected to the clarity and line spacing of the specification and the claims. Accordingly, a substitute specification is being submitted concurrently herewith, wherein the claims have been rewritten in double-spaced format. No new matter has been included in the substitute specification. Accordingly, Applicant respectfully requests that these objections to the specification be withdrawn.

Rejection of the Claims in view of Prior Art

Childs discloses a telecine system for scanning cinematographic film in order to provide digital images. The system includes three CCD line-array sensors which detect red, green and blue light transmitted through the film respectively. Each CCD sensor comprises an array of sensors, each sensor of the array corresponding to a pixel of the

digital image obtained, such that the digital image values for each pixel of an image corresponding to an image on a film frame are obtained. The system also comprises a fourth sensor which is an infra-red CCD line-array sensor. *Childs* teaches that infra-red light will normally pass through film largely unattenuated. However, where a defect such as dirt or a scratch is present on the film surface, infra-red radiation is blocked and so does not pass through the film. Thus, as the array of sensors in the infrared sensor is spacially equivalent to that of the red, green and blue sensors, pixels corresponding to blemishes on the film surface can be identified where the signal detected by the infra-red sensor is above a preset level for those pixels.

In contrast to the device disclosed in *Childs*, amended claim 1 recites digital values within the visible range that are generated for each pixel in an image and pixels corresponding to defects on the film that are identified by *comparing those digital values within the visible range* to a predetermined threshold. Thus, *no additional infra-red sensor is required* in order to detect pixels corresponding to defects on the film in the present application, but rather *the actual visible digital image signals themselves* are used in order to detect the defects.

As described above, in the device of *Childs*, an additional infra-red sensor must be supplied in order to detect defects. This requires a telecine machine or scanning device to be built with such an additional sensor provided in it. In contrast, the presently claimed invention compares the digital image values that would be obtained from any standard telecine machine containing only sensors for detecting visible light to a threshold in order to directly determine whether or not any pixels in the digital image data correspond to defects on the film. This has the advantage that digital image signals

could be obtained by scanning cinematographic film in any existing telecine or other device, and the digital image signals could then subsequently be analyzed and adjusted if necessary by the method of independent claim 1. Thus, a device for analyzing and adjusting the digital image data could be built or purchased to be used in combination with an existing telecine machine, and this would be significantly less expensive than purchasing a new telecine machine, as would be necessary with the device and method described in *Childs*. Consequently, claim 1 is not anticipated by *Childs*.

The Examiner rejected original claims 2 and 3, which are now incorporated into amended claim 1, under 35 U.S.C. § 103 as being unpatentable over *Childs* in view of *Kameyama*. Applicant respectfully disagrees with this rejection. As an initial matter, *Kameyama* relates to a means of detecting defects in the image obtained in a video camera, rather than a method of scanning frames of cinematographic film to generate digital images. Thus, amended claim 1 is not anticipated by *Kameyama* for this reason alone.

Moreover, one of ordinary skill in the art would not have considered combining the teachings of *Childs* and *Kameyama*. In order to combine the *Childs* and *Kameyama* references, there must be a clear teaching or suggestion to make the combination. *In re Dembiczaik*, 175 F.3d 994, 999 (Fed. Cir. 1999). For a combination of references to be proper, the Office Action must provide a showing of a teaching or motivation to combine the references. *Id.* That "showing must be clear and particular." *Id.* Here, the Office Action has provided no showing of any teaching or suggestion to combine the *Childs* and *Kameyama* references, let alone a "clear and particular showing." On the contrary, *Kameyama* relates to a solid state image pickup apparatus for use as a video camera,

which is a significantly different field from that of digital images obtained by scanning cinematographic film. Specifically, in the field of video cameras, the types of defects occurring in cinematographic film due to dirt or scratches on the actual film surface do not occur. *See In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992) ("In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned."). Thus, one of ordinary skill in the art would not have considered the teachings of *Kameyama* to be relevant to the present invention.

In addition, even if one of ordinary skill in the art would have reasonably considered the teachings of *Kameyama*, he or she could not have modified the teachings of *Childs* in order to arrive at the claimed invention on the basis of *Kameyama*. In particular, the method of *Kameyama* describes a way of detecting a defective CCD pixel within a digital image obtained by a video camera. As is clear from column 1, lines 14 to 19 of the *Kameyama* reference, *Kameyama* relates to the detection of a single sensor within a CCD array that is malfunctioning, thus providing a signal that does not correspond to the color of light falling on it. Such a malfunctioning CCD sensor will provide the same signal in each digital image obtained, as it will continue to malfunction until it is mended.

This is in contrast to the system of the present application, in which a corresponding pixel within two subsequent digital images may be correct in the first image and incorrect in the second image due to a piece of dust being present on the film surface on the second frame of film corresponding to the second image only. Therefore,

in short, the device of *Kameyama* relates to analyzing the signal obtained from a sensor in order to detect a malfunction of that sensor, whereas the present application relates to analyzing the signal obtained from a sensor to determine whether or not a defect was present on the film from which that signal was obtained. Thus, even if one of ordinary skill in the art had considered the teachings of *Kameyama*, he or she would not have realized that the device of *Childs* could be modified to remove the infra-red sensor and to compare the image signals obtained from the sensors directly to the threshold in order to identify defects in the digital images. Neither the teachings of *Childs* nor the teachings of *Kameyama* would have led one of ordinary skill in the art to understand that the presence of a defect on the surface of film causes a difference in the level of visible light transmitted by the film which is significant enough to allow the presence of that defect to be detected directly. Accordingly, the combination of *Childs* and *Kameyama* fails to disclose or suggest the presently claimed invention.

With regard to claim 7, this claim relates to a method of scanning frames of cinematographic film to generate digital values of pixels constituting images on film frames, in which a pixel corresponding to a part of a scratch on the film is identified and the remaining pixels corresponding to the scratch in that frame are then identified by comparing *only* each of the pixels located in a column generally aligned with the identified pixel and extending in the direction of film transport to a predetermined threshold value, and identifying those pixels having a value extending beyond the predetermined threshold value as constituting the remaining pixels. The disclosure of *Childs* only teaches the possibility of comparing *each and every* pixel within a digital image to a threshold value in order to identify those pixels corresponding to defects on

the film. In contrast, the method recited in claim 7 provides an improvement by which once a single pixel forming part of a scratch has been identified (e.g., manually by an operator), only those pixels which are aligned with that pixel need then be analyzed in order to identify the scratch. This method of claim 7 is neither disclosed nor suggested by *Childs* or *Kameyama*.

Similarly, claim 14 relates to a method of scanning frames of cinematographic film to general digital values of pixels constituting images on a film frame, in which pixels corresponding to a scratch defect on a film frame are identified and in which a specific method for correcting for the scratch defect is provided where the width of the scratch exceeds a predetermined number of pixels. Again, there is no disclosure of this method of claim 14 in *Childs* or *Kameyama*.

If, for any reason, the Examiner is unable to allow the application on the basis of this amendment and feels that a telephone conference would help clear up any unresolved matters, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number listed below.

Respectfully submitted,

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